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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,141	03/04/2002	Onn Haran	032433.0003.UTL	5152

7590  
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EXAMINER

GREY, CHRISTOPHER P

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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05/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/091,141

Applicant(s)

HARAN ET AL.

Examiner

Christopher P. Grey

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-40 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 10-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (US 6801547), hereinafter referred to as Boyd in view of Pfeffer et al. (US 7154879), hereinafter referred to as Pfeffer.

**Claim 1** Boyd discloses discovering (col 3 line 51, invites and Col 2 lines 63-67) the first node (fig 1, 28a, ONU) by the central controller (fig 1, 22, OLT);

Boyd discloses synchronizing (fig 2, 250, adjusts) the internal clock of the first node to the internal clock of the central controller (fig 2, 230, 240 and 250, OLT /controller transmits a determined time difference to ONU/first node, and the first node adjusts/synchronizes itself accordingly), where a clock is inherently necessary within the OLT and ONU in order to perform the adjustments and measurements disclosed;

Boyd discloses measuring a round trip delay from the central controller to the first node (Col 4 lines 24-25).

Boyd discloses transmitting uplink data from the first node to the central controller (Col 1 lines 49-51, where the completion of ranging grant procedure allows for transmission of upstream data) in response to transmission authorization (fig 2, 250, another response cell to the OLT) sent by the central controller (fig 2, 250, ONU) to the first node (fig 2, 250, OLT, where the transmission of the response cell when a 0 time difference is experienced is an authorization of the completion of synchronization).

Boyd does not specifically disclose using IEEE 02.3 Ethernet standard packets.

Pfeffer discloses IEEE 02.3 Ethernet standard packets in a passive optical network (abstract, Col 2 lines 31-40 and Col 4 lines 18-20).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the ATM PON as disclosed by Boyd, with an IP based passive access network on Gigabit Ethernet as disclosed by Pfeffer (Col 4 lines 28-30). The motivation for this modification is to offer a disruptive technology alternative.

**Claim 2** Boyd discloses transmitting downlink data from the central controller to the first node (fig 2, 240, OLT/controller transmits to ONU/first node), using IEEE standard ethernet packets as disclosed in the rejection of claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (US 6801547) in view of Pfeffer (US 7154879), in further view of Matsumoto et al. (US 6711264), hereinafter referred to as Matsumoto

**Claim 3** Boyd does not specifically disclose encrypting downlink data.

Matsumoto discloses encrypting downlink data (Col 3 lines 1-12).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the encryptor disclosed within Matsumoto, into the Central controller as disclosed Boyd. The motivation for this combination is to secure the transmission of data.

**Claim 4, 5** Boyd does not specifically disclose the step of the first node periodically sending a different encryption key to the central controller, wherein the step of encrypting the downlink data

comprises the step of encrypting the downlink data with the encryption key as received by the central controller from the first node.

Matsumoto discloses the step of the first node periodically sending a different encryption key to the central controller, wherein the step of encrypting the downlink data comprises the step of encrypting the downlink data with the encryption key as received by the central controller from the first node (Col 2 lines 11-25 and Col 3 lines 1-20 and Col 6 lines 29-35).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the encryptor and key updating means as disclosed by Matsumoto, within the controller as disclosed by Boyd. The motivation for this modification is for a constant update of a key and secure transmission of data.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (US 6801547) in view of Pfeffer et al. (US 7154879), in further view of Matsumoto et al. (US 6711264), hereinafter referred to as Matsumoto in further view of Bedrosian (US 6895189).

**Claims 6, 7** The combination of Boyd and Matsumoto do not specifically disclose the step of detecting, by the central controller and the first node, connection failure between the central controller and the first node.

Bedrosian discloses a clock processor that detects a failure (Col 6 lines 40-42).

It would have been obvious to one of the ordinary skill in the art that in the event of a controller and a node communicating, some form of detection of the failure of communication is necessary (inherent within the art). It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the clock processor or any equivalent failure detection known within the art, to the OLT and ONU disclosed by Boyd. The motivation for this combination is to detect failures, and furthermore for fast recovery from failures.

***Allowable Subject Matter***

5. Claims 28-40 are allowed.

6. Claims 10-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

**7. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 7:30-5:00.

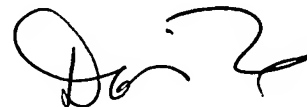
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571)272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Grey  
Examiner  
Art Unit 2616

C. Grey 5/23/07



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